

ABSTRACT OF THE DISCLOSURE

A device for amplifying light pulses has an optical stretcher, in which the light pulses of a pulsed laser light source are temporally stretched, and an optically pumped amplifier fiber, in which the light pulses are amplified and, at the same time, temporally compressed. In order to improve such a system with regard to the pulse duration and the pulse energy that can be achieved, the amplifier fiber has a positive group velocity dispersion, whereby the amplifier fiber has non-linear optical properties, so that the optical spectrum of the light pulses is broadened during the amplification process, taking advantage of non-linear self-phase modulation.